

PUBLIC SERVICES AND PROCUREMENT CANADA EXAMINES THE BENEFITS OF A REAL-TIME RAIL FOR THE GOVERNMENT OF CANADA'S PAYMENT PROCESSES



**PAYMENTS
CANADA**

Key themes explored in this case study:

- 1 How will the GC and Canadian individuals and businesses benefit from the capabilities being delivered by payment Modernization?
- 2 What can the GC do to prepare for payment Modernization in concert with the industry program?
- 3 Why it is important to consider payment Modernization's impacts to an organization's strategic plans?

About the organization:

The organization in this case study is Public Services and Procurement Canada (PSPC); more specifically, the Receiver General for Canada (RG).

The Minister of PSPC is accorded the role of Receiver General within the Public Works and Government Services Canada Act. The mandate of the RG includes managing payments into and out of the Government of Canada (GC)'s bank account, the Consolidated Revenue Fund that is held at the Bank of Canada (BoC), and managing banking service arrangements for the federal government.

Throughout this case study, all references to the RG are in reference to the area of PSPC responsible for managing the Government of Canada's payments into and out of the Consolidated Revenue Fund and not to the Minister of PSPC.

The RG has been looking into opportunities to improve existing processes, uplift technology and enhance Canadians' experience when sending and receiving federal government payments. The Receiver General has begun initial planning to meet their own payment modernization objectives, which aligns with the capabilities being introduced by Payments Canada's Modernization program and its delivery of the new ISO 20022 enabled payment rails.

The Receiver General is cognizant of payment Modernization, however it is in the early stages of examining the benefits it can realize through the capabilities being delivered by modernization initiatives. Despite this, the RG recognizes that modernization is critical to Canada staying at the forefront of technology change — as such it has a genuine appetite and

eagerness to develop a clear strategy and plan for how it will employ the capabilities to deliver a new experience, enhance or replace existing inefficient payment processes and improve the level of data associated with payments.

As this study will highlight, there are significant opportunities and learnings for the Government of Canada. These learnings and opportunities are applicable across various federal government departments and agencies and many other large organizations in Canada. However, the transition to this new state (e.g. ISO 20022 usage) will be a multi-year initiative and it is crucial that critical ecosystem players, such as the federal government, begin planning, designing and building capabilities in conjunction with the Modernization program so that they are in a position to employ the capabilities from launch. Additionally, the essential nature of these services and the need to be in a position to harness new technologies to expedite payments has been further heightened by the COVID-19 global pandemic, which has already called into question the viability of legacy payment methods (such as cheques).

This case study will examine a use case which describes how the Government of Canada can benefit from the enhanced payment and data capabilities being delivered by payment Modernization with a specific focus on the Request to Pay (RtP) payment process and the underlying data in ISO 20022 messages.

In addition to identifying the benefits that can be realized through the introduction of the ISO 20022 message standard, this case study also examines the value of Request to Pay, which is a series of ISO 20022 messages that allow a payee to request payment from a payor and provide details about the payment, including invoice information. RtP functionality can support a broad range of use cases and the introduction of enhanced and new payment experiences.

This study will seek to outline the functionality and how modernization will deliver advantages, benefits and opportunities which may resonate with other organizations in a similar position that may wish to leverage similar capabilities.

This use case study aims to outline key considerations for organizations to assist them with internal activities, such as:

- 1** Establish their overall preparedness to leverage payment Modernization capabilities (e.g. RtP).
- 2** Assess their readiness to consume, store and use the data in ISO 20022 messages and the impact it will have on their current business processes, applications and infrastructure.
- 3** Raise the level of awareness within their organizations, to coordinate their efforts to ensure they have a broader strategic adoption plan for payment Modernization.

EXECUTIVE SUMMARY

ORGANIZATIONAL PRIORITIES



- Improve the overall experience for Canadian individuals and businesses when remitting payments to the Government of Canada.
- Identify opportunities to lower costs, eliminate waste and optimize operational and back-office processes.
- Move towards new digital payment options to reduce reliance of paper and cheque-based transactions.

DRIVERS OF CHANGE



- The need to reduce the reliance on paper-based payments and ultimately reduce operating costs and eliminate unnecessary manual processes relating to paper based payments and remittance slips.
- The demand for digital payments, and the opportunity this presents to optimize the receivable and payable processes, and deliver automation through better straight-through processing and reconciliation.

POTENTIAL BENEFITS



- Enhanced and more efficient experience for Canadian individuals and businesses when remitting payment to the Government of Canada.
- The ability to leverage straight-through processing, optimize reconciliation activities and minimize duplication and rework.
- Environmental benefits through the reduction of paper-based invoices and payments.

SOURCE OF BENEFITS



- Canadian individuals and businesses would have more convenient, 24/7/365 real-time options when remitting payment to the Government of Canada. This ability offers payment certainty, lowers the risk of lost invoices or payments, offers more transaction information and better back-end processing—which reduces the risk of error and the need for payment tracking, follow-up and queries.
- Further digitization of processes would reduce reliance on paper, including cheques and physical delivery of invoices. This would reduce loss and damaged paper items and subsequent reissue of these items, which would lessen the negative environmental impacts associated with these activities and save in unnecessary processing costs.

EXECUTIVE SUMMARY

PROJECTED EFFORT



- The shift to digital payments and billing is a significant one that this organization has already initiated. To realize the value of payments Modernization, effort is required across:
 - › People: Training and change management on the new processes, enhanced capabilities and richer data to upskill the team and improve adoption.
 - › Technology: System and platform uplift is necessary to harness capabilities delivered by Modernization and ISO 20022 and enable straight-through processing efficiencies.
 - › Processes: Optimization and removal or replacement of unnecessary processes to improve efficiencies and processing times as well as avoid possible rework.

ACCELERATORS



- The organization's existing ability to deliver digital payments through AFT, EDI and wires may be uplifted rather than replaced to help leverage the new capabilities being developed by the payment Modernization program and be considered as part of a broader migration plan.
- The COVID-19 pandemic has highlighted the need, and subsequently the investment into alternative digital and faster payments options given the challenges faced in distributing emergency relief funds (e.g. CERB), the difficulties faced in physical cheque presentment and processing, and the need to adhere to public health protocols (e.g. social distancing).

LESSONS LEARNED FROM CASE STUDY



- Critical ecosystem players, such as the Government of Canada, need to commence planning and coordinating, and begin to work with external parties such as vendors and their financial institutions (FIs) to place them in a position to realize the value, from day one, of payment Modernization.
- The essential nature of the services provided by the federal government and the need to be in a position to harness new technologies to expedite payments has been further heightened by the COVID-19 global pandemic, which has already called into question the viability of legacy payment methods (such as cheques).

PAYMENT MODERNIZATION: BACKGROUND

Why are payments being modernized?

The need to modernize is in response to various drivers, such as the global trend towards the real-time movement of money, the need to reduce reliance on paper-based payments and manual processes, the rise of alternative payments such as those made via social media, enhanced technology and better connectivity enabling new payment products, emerging industries and needs such as the on-demand economy, and growing demands from payments end-users that are asking and expecting money to move faster with better traceability, transparency and information.

The impact of COVID-19

The COVID-19 pandemic has had serious and profound effects on all aspects of people's everyday life, including how payment transactions are conducted and consumer expectations with regards to the efficacy, speed and ease of those payments.

A recent example has been the need for economic support such as the Canada Emergency Response Benefit (CERB), which challenged the government to deliver financial relief quickly to those that need it and in turn highlighted the need for faster, agile, secure and more digital forms of payments.

Additionally, with heightened fears regarding cross-contamination and the need for social distancing, the reduction in cash and cheque usage has been accelerated. The effects of this reduction may be long-lasting and may see transactions, traditionally conducted via cash and cheque, shift irrevocably to digital payments.

How are payments being modernized?

Payments Canada is leading an industry-wide payment Modernization program to ensure our country's payment infrastructure, rules, standards and bylaws are best equipped to support innovation for the benefit of all Canadians, Canada's economy and global competitive position.

Payment Modernization aims to modernize Canada's high-value and retail batch payment systems as well as introduce a new Real-Time Rail (RTR) payment system. In addition, this program will incorporate the work to transition to the ISO 20022 standard, mandated by SWIFT for cross-border payments by 2022, on the high-value payment system, Lynx, and will implement ISO 20022 to underpin payments on the RTR upon launch. This ISO 20022 enablement is a particularly critical activity to move towards the required ubiquity to deliver greater domestic and global interoperability and subsequently enable enhanced payment data capabilities, products and services.

The two critical pieces being delivered by payment Modernization which will be touched on in this use case are:

- 1 ISO 20022 financial messaging standard.
- 2 Request to Pay (RtP) via the Real-Time Rail (RTR).

ISO 20022 AND REQUEST TO PAY IN DETAIL

What is ISO 20022?

- ISO 20022 is becoming the standard global language for payments as it enables richer, structured data to travel with a payment, as opposed to legacy whereby the data is limited and often travels separately.
- ISO 20022 messaging will allow the exchange and potentially other ancillary components of the payment value chain to be optimized through this richer data. Examples of this include leveraging the structured data to improve existing reconciliation processes that are reliant on unstructured information from legacy applications.
- Its implementation is being leveraged within broader digital payment initiatives seeking to achieve a wide range of strategic and business outcomes and to reduce many pain points experienced today in sending and receiving payments. These pain points in particular are experienced in complex industries that process large volumes of payments with access to inadequate information.

What is the Real-Time Rail (RTR)?

- The Real-Time Rail is Canada's new payment system expected to go-live in 2023. With the ability to reach more deposit accounts in Canada, this new system will support real-time payments 24/7/365 that are irrevocable and final. It will also act as a platform for innovation, allowing for new products and services that give Canadians new ways to pay and transfer money.
- The new RTR being introduced in Canada will be supported by ISO 20022 messages, which will allow the exchange of payments to be accompanied by richer, structured and more relevant transaction data in a standardized format.

What is Request to Pay (RtP)?

- Request to Pay is a service that leverages the RTR to enable a creditor to send a request for payment from the receiver (debtor), along with information such as requested amount, what the payment is for, due date, etc. It offers a more secure and controlled method for paying than many existing legacy services, which generally allow third parties direct access to debit funds from a debtor's account. RtP will allow the debtor, upon accepting the request, to then leverage the RTR to initiate a push or credit payment from their account to the creditor's.

- This RtP functionality can support a broad range of retail, commercial or governmental use cases. Due to the flexible nature of the service, we are seeing many variants of RtP being delivered across the globe: from the pan-European service being touted by the Single Euro Payments Area (SEPA); the cross-rail Request to Pay service being proposed in the UK; to the Mandated Payments Service (MPS) in Australia, which will see a central utility service facilitate the creation, storing and maintenance of Request to Pay mandates.

How do RtP and ISO 20022 work together?

- At a high level a RtP starts with the creditor party requesting funds, to settle a bill or for an amount owed from a debtor via an ISO 20022 Request to Pay message (pain.013) via the creditor's financial institution (FI). The pain.013 message can be populated with the relevant information such as invoice number etc, which may normally appear on a paper-based invoice.
- This triggers a notification to the debtor, via their FI, asking if they approve or reject the request. If they accept the request, an "accept" confirmation is provided to the creditor. The debtor then sends the requested funds via their FI using a Credit Transfer (pacs.008) message. This payment will be delivered to the creditor FI and include the data from the original pain.013 request echoed back in the payment. Upon receipt of the payment, the creditor's FI then confirms receipt of the requested funds.
- A key callout is that in a RtP transaction, the receiving party (debtor) always has the choice to pay or not, and based on the business rules of the service they can also choose when to pay, and potentially how much to pay. Additionally, in many RtP schemes, if the debtor accepts the request, a process to collect the payment from the payer's account is automatically triggered, with details of the payment pre-populated in the ISO 20022 payment message.
- No further action is needed by the payment requestor; the payment amount is automatically credited to their account, without the need to provide their account details to the payor.

What are the benefits of RtP?

- Benefits of RtP for Canadian individuals and businesses:
 - › Control and flexibility: A key benefit of RtP is that the debtor remains in control of the financial leg of the RtP transaction flow, only choosing to facilitate payment if they accept the originator terms and amount. As the creditor is only sending a payment initiation request, essentially only requesting a payment to be made, it is therefore inherently less risky than a payment clearing message, which entails the actual movement of money.
 - › Improved experience and convenience: Canadian individuals and businesses will have the ability to digitally remit payments to the GC, 24/7/365 without the need for physical paper, cheques or in some cases a separate payment process.
 - › Payment certainty and tracking: Canadian individuals and businesses will have payments completed within seconds of accepting the RtP and have payment finality confirmed, avoiding the need for follow-up or the risk of lost payments.
 - › More meaningful information: More remittance information will accompany payments that are exchanged on the RTR, which will assist Canadian individuals and businesses in their understanding of the transaction, improve first point resolution and avoid the need for queries.
- Benefits of RtP for the Government of Canada:
 - › Straight-through Accounts Receivable processing: RtP offers end-to-end traceability of owed payments from request initiation to payment completion. As the federal government would be able to initiate a funds request that is pre-populated with the ISO 20022 payment request messages with data such as payment amount, invoice number, the payee's account details and other instructions, they can then use this data when it is echoed back in the response to support processing and reduce the need for follow-up.
 - › Improved reconciliation and reporting: RtP with ISO 20022 transaction data will enable the federal government to enhance processes (e.g. investigation), automate reconciliation and improve reporting detail and data quality.
- › Reduced manual handling: Reduced reliance on paper-based billing and cheque issuance will reduce reliance on third party manufacturing, processing and handling/transportation timelines which in turn can reduce effort in tracing payments and following up with payors.
- › Enhanced data and analytics capabilities: Richer data can enable analytics and forecasting which may have previously been constrained by poor to limited access to data and unstructured free format data.
- Enable emerging market trends— RtP can help to enable emerging market trends such as:
 - › Digitize billing services, by issuing electronic invoices and reducing reliance on paper and physical mail-based invoices.
 - › Collect payments faster from customers, enabling greater payment certainty.
 - › Receive and use richer remittance data, to optimize and make processes more efficient (such as reconciliation burden).
 - › Seek to reduce the risks and costs associated with existing legacy options (such as lost cheques, poor visibility of late payments and outdated customer details).
- These efficiencies can be attained by leveraging the ISO 20022 data elements in the payment message to improve transparency (for the end customer/debtor), enable richer data such as hyperlinks or enable automation through structured data.

What is the effort required to implement RtP?

PEOPLE – MODERATE ●●○



- Upskill frontline and back-office staff to familiarize them with the new capabilities, updated/new processes, and the richer data and its associated benefits.
- Communicate the process and benefits of using RtP as a payment method to Canadian individuals and businesses to ensure positive adoption.

TECHNOLOGY – MODERATE ●●○



- Core technology upgrade to support faster payment (including RtP), ensure compatibility with ISO 20022, and enable services able to harness these payment Modernization capabilities.
- Enhance ancillary systems such as treasury, back-office applications, data services, analytics tools and channels to support new services and experiences.

PROCESS – MINIMAL ●○○



- Update or eliminate impacted and potentially superfluous processes and establish new processes which leverage the capabilities delivered via payment Modernization and internal upgrades.

PROFILE: ABOUT PSPC

Through its mandate, Public Services and Procurement Canada (PSPC) offers centralized payment services to all federal government departments and agencies.

This case study looks at the GC with a focus on how payment Modernization can expand the services it offers to those departments and agencies and thus to Canadians and businesses.

As the department tasked with administering payments on behalf of the GC, PSPC processes a large volume of inbound and outbound payments for a range of different departments and purposes. This use case will focus on the collection of monies that are due by Canadian individuals and businesses to the GC (e.g. tax remittances, custom duties, overpayments, National Student Loan repayments, etc.). These payments could be triggered by a payor who recognizes a need to pay, by a GC department who informs a payor of a need to pay, or through a recurring payment schedule.

Canadian individuals and businesses who owe an outstanding amount to the GC must arrange a payment to the RG which can be in the form of:

- Cheque, mailed with a personalized remittance voucher.
- Pre-Authorized Debits (PADs).
- Debit and credit cards.
- FI online banking/ bill payment applications.
- Online debit, e.g. using the "My Payment" service.
- Third party remitters.
- Over the counter paper remittances via an FI.
- Wire transfer, for Canadians without a Canadian bank account.

This use case will introduce Request to Pay as an additional payment remittance option for Canadian individuals and businesses.

LEVERAGING PAYMENT MODERNIZATION TO REALIZE VALUE FOR ALL CANADIANS

There are numerous benefits that RTR, RtP and ISO 20022 data in the accompanying payment messages can deliver for the Government of Canada.

Challenges

The federal government is seeking to address issues such as:

- Challenges in promoting digital payments and issues stemming from non-digital payments such as payment lags, transit risks and missing or delayed payments which results in more manual back-office exception handling and poor customer experience.
- Preventable payment inquiries from Canadians due to insufficient or unclear information sent with the payment request resulting in higher volumes of inquiries to confirm filings and payment receipts and costs associated with running call centres.
- Difficulties in tracking of payments owed and/or outstanding remaining balances resulting from failed pre-authorized debits (PADs), missing cheque payments, adjustments and late payment penalties.
- Costs associated with existing payment methods, which do not guarantee payment certainty, result in unnecessary work to follow up and administer and incur high processing costs in the form of manual posting and cheque handling.
- Issues when reconciling payments with limited remittance information accompanying some payments and unclear value dates.
- Reduce the administrative burden of obtaining electronic authorization for PAD agreements and the necessity to validate and store those records, which has limited PAD uptake in the GC. How will RtP address these challenges?

The delivery of a real-time payment system with Request to Pay transaction capability all underpinned by more data via the ISO 20022 message standard will deliver:

- Faster, real-time payments for receivables enabling certainty and payments irrevocability—and supports near real-time visibility for both parties.
- First point inquiry resolution support through structured ISO 20022 data travelling with the payment, and in a way which can be easily presented/provided to customers through their preferred channel.
- Enhanced and optimized processes and reconciliation through the use of structured data to automate, enable straight-through processing and improve transaction transparency and detail.
- Digitization of payments, and improving process efficiency can lead to direct and indirect costs savings and eliminate waste.
- Required payments can be requested by the GC department or agency and be populated with the necessary detail to enable transparency for the receiver.

The application of the RTR, coupled with the RtP capability in administering the collection of funds promises improvements to efficiency and enhancements to back-office processes. This in turn will support the delivery of superior customer service and experience to Canadian consumers and businesses, through the certainty, transparency and convenience enabled by the RTR, RtP and the richer data available via ISO 20022.

SCENARIO — COLLECTING MONEY OWED TO THE GOVERNMENT OF CANADA*

Scenario: A Canadian individual or business is sent notice of funds owed

Note: This scenario is depicted for illustrative purposes only. The process outlined below is not in development and no solution discussions have transpired between Payments Canada and PSPC or other government departments.

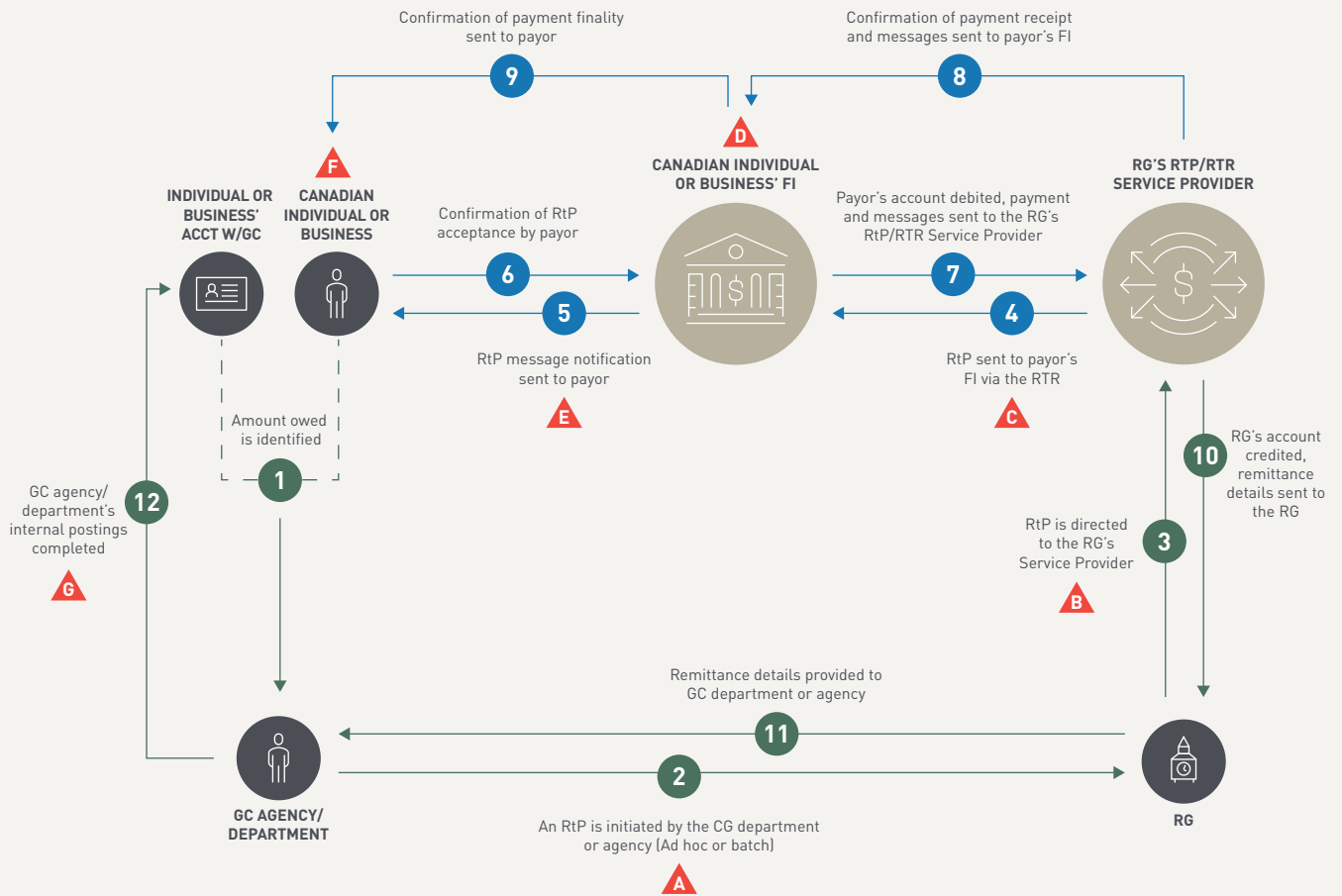
Process:

- 1 The federal government department or agency reviews the file of a Canadian individual or business and determines that they owe money to the GC (e.g. taxes, duties, fines, loan repayment, etc.).
- 2 The department or agency initiates an RtP for the balance owed by sending a request to the Receiver General (RG).

This request can include the reference number of the file and/or debtor account in question, a description for the request (e.g. owed tax for FY20), as well as other core payment elements (such as payment date, amount, destination account etc.) which provides transaction details and transparency. Note: this RtP message can be generated and submitted individually or it can be added to an XML batch file which can be processed and transmitted as individual transactions through the RTR.
- 3 The RG directs the RtP message to the RG's RtP or RTR service provider for processing.
- 4 The RG's RtP/RTR service provider directs the RtP message to the individual's or business' FI via the RTR.
- 5 The FI notifies the individual or business (e.g. via mobile banking application) that an RtP has been received and displays the pertinent information to enable the individual or business to ascertain the purpose and validity of the request and confirm acceptance of the request.
- 6 Once the individual or business has accepted the request and approved payment, their FI debits their account for the approved amount and triggers a corresponding payment.
- 7 RTR directs the payment to the RG's RtP/RTR service provider and upon receiving the funds and associated remittance data the RG's RtP/RTR service provider confirms receipt to the individual's or business' FI.
- 8 The FI can now provide confirmation to the individual or business that the GC/RG has received the funds via a confirmation message.
- 9 The RG's RtP/RTR Service Provider credits the RG's account and provides confirmation and the remittance data to the RG.
- 10 The RG forwards confirmation of payment and the remittance data to the GC department.
- 11 The federal government department receives confirmation and completes the posting to the individual's or business' account with Government of Canada.

* postings to the RG's and GC departments' internal accounts sit outside of the real-time posting service level agreements (SLA) prescribed for RTR and the RtP.

Process Diagram:



RTR FLOW

GC INTERNAL PROCESSING

Note: postings to the GC Department's internal accounts sit outside the RTR/RtP process and timeline

CONSIDERATIONS

Refer to "Illustrative Capabilities" section for additional considerations

Illustrative Capabilities

To support the delivery of an end-to-end RTR/RtP solution that will support the RG and downstream activities with the various federal government departments, a number of potential requirements have been identified, which will need to be considered as part of any future planning and design activities. Whilst these requirements are framed against the use case and scenario provided, they have been included as a catalyst for other organizations that may be considering how they will be able to use RTR/RtP, how they will prepare for ISO 20022 and are seeking guidance on this journey. These requirements cover the end-to-end flow (as described in the example), and for some organizations this will need to be discussed/addressed by either their FI, technology and/or RTR supplier/provider, internal business and technology teams (e.g. channel, operations) and through industry groups and forums (e.g. Stakeholder Advisory Committee).

Capability Considerations

A. Triggering RtP requests

- › The steps involved in triggering the payment request sit outside of the RTR system itself. Among the considerations for the federal government will be to determine the most effective way of triggering RtP requests (e.g. scheduled batch processing of RtPs, such as for recurring collections payments and/or initiating real-time ad hoc RtPs, such as could be used at the point of submission for tax filings).
- › Another consideration will be determining the most effective way to trigger reminder or follow up RtP requests, such as when an RtP is not accepted or when it is not paid in full.

B. Direct (government department or agency to the RG's RtP/RTR service provider) or indirect (through the RG) delivery of RtP requests

- › The process has been illustrated to show the role the RG may play in directing RtP requests and return information between the departments and agencies and the RG's RtP/RTR service provider; however, this may not be the optimal way for the government to interact with the RTR.

C. Remittance details to enable straight-through processing

- › A key consideration for the federal government to realize the benefits of RtP/RTR would be to identify the remittance elements that must be included in the payment message to enable straight-through processing for the initiating department or agency.

D. Scalability and expandability of solution

- › All decisions should consider support for higher volumes of RtPs and expanded uptake of RTR participation to ensure sustainability with regards to the GC infrastructure.

E. Authenticity of RtP requests and related security measures

- › There are many scams which attempt to imitate federal government departments and agencies in order to trick Canadians into illegitimate financial transactions. Therefore, the need to provide Canadian individuals and businesses with confidence that they are fulfilling a legitimate RtP, and capability to support security verification and authentication is an area which is of critical consideration.

F. Flexibility for payor

- › A key benefit of RtP is that the debtor is able to control if and when the payment is remitted to the requester. It will be important to consider mechanisms which allow Canadian individuals and businesses to choose how much and when they will pay.
- › Another crucial benefit for the payor is allowing them to choose the account from which they wish to pay, which will avoid the need for the government to obtain or store a payor's account details. The federal government should consider ways to enable this flexibility for the payor and should explore ways to enable alias-based routing (e.g. allowing payors to provide an email address or phone number instead of bank account details).

G. Government of Canada's internal account updates of Canadian individuals and businesses

- › Similar to the initiation of an RtP, updates to the internal accounts within the RG and/or the federal government department or agency sit outside of the RTR. The federal government will need to consider how quickly these updates should occur and if there are ways to improve the speed or efficiency of internal processing.

Modernizing Canada's payment systems and ISO 20022

Payments Canada is a public purpose organization that owns and operates Canada's payment systems and is responsible for the physical infrastructure and the associated bylaws, rules, and standards that support these systems. It also has a duty to promote the efficiency, safety, and resilience of Canada's payment systems while taking into account the interests of end users. Payments Canada is working closely with the payments ecosystem, its financial institute members, and its regulators (the Department of Finance and the Bank of Canada), to modernize Canada's payment systems to ensure Canadian individuals and businesses remain globally competitive.

ISO 20022, the global financial message standard, is the foundation for payment messaging across all modernized payment systems. The transition to ISO 20022 will support interoperability with global payment ecosystems, enable new opportunities for financial products and services, and bring new levels of efficiency to the Canadian economy.



To learn more about Payments Canada, modern payments and ISO 20022, visit payments.ca

If you would like to share your organization's ISO 20022 journey, email Payments Canada at modernization@payments.ca